

99/53

Mashing

Boiling at 250° 300°

RECORDED

A.D. 1885, 1st JANUARY. N° 58.

PROVISIONAL SPECIFICATION.

An Improved Process of Brewing for Obtaining Temperance or Non-intoxicating Beers.

I ALEXANDRE MANBRÉ of 75 Denmark Road Camberwell in the County of Surrey, Brewer and Sugar Manufacturer, do hereby declare the nature of the said invention for "AN IMPROVED PROCESS OF BREWING FOR OBTAINING TEMPERANCE OR NON-INTOXICATING BEERS" to be as follows:—

5 This invention has for its object the production of beers which are non-intoxicating but otherwise of the character of mild, bitter, and pale ales, stout, porter, Lager, and other beers from malt, grain, starch, gum, dextrine, saccharine and other amylaceous and sacchariferous substances.

10 It is well known that beers produced by the present process of brewing contain a high per centage of alcohol as compared with the percentage of solid extract. Such beers, as is well known, are intoxicating and as a consequence their use is not only limited but is in some cases detrimental to the human system and as a consequence to health. A few attempts have been made to produce beers containing a minimum proportion of alcohol so as to render them unintoxicating but
15 the results have not been satisfactory.

Now, by my improved process, I have found that by treating the materials employed in the manner hereinafter described and employing suitable temperatures I am enabled to exercise absolute control over the nature and character of my products and as a consequence I am enabled (in addition to the fact that purity,
20 wholesomeness, stability and refreshing qualities are the results of my process) to produce beers of the most widely divergent character viz. beers of body and great nourishing qualities and of merely nominal spirit strength (from 1 to 2%) to suit the requirements of those who advocate temperance principles.

In carrying out my improved process I proceed as follows:—
25 I conduct the mashing operation or saccharification of the material by subjecting it to such temperatures as will enable me to produce suitable proportions of unalcoholisable worts so as to obtain after fermentation a beer containing a large per centage of solid extract with a nominal proportion of alcohol, thus rendering such beer unintoxicating. The temperatures I use vary from 120° to
30 300° Fahrenheit, according to the nature and character of the material employed.

The worts thus obtained are then subjected to a temperature of from 250° to 300° Fahrenheit, for the purpose of sterilising or otherwise rendering inert the

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nitrogenous and other objectionable matters they contain, and which otherwise would affect the character and quality of the beer to be produced.

The purified worts, with added hops, are then subjected to ebullition, at a temperature varying from 250° to 300° Fahrenheit, according to the nature and character of the hops employed, for the purpose of sterilising or otherwise rendering 5 inert the nitrogenous and other objectionable matters of the hops. The boiled worts are then cooled down to suitable temperatures and subjected to fermentation in the usual way.

Dated the 1st day of January 1885.

G. F. REDFERN, 10
4, South Street, Finsbury, London,
Agent for the Applicant.

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This invention has for its object the production of beers which are non- 20 intoxicating but otherwise of the character of mild, bitter and pales Ales, stout, porter, lager, and other beers from malt, prepared and non-prepared grain, cereals, starch, gum, dextrine saccharine and other amylaceous and sacchariferous substances.

It is well known that beers produced by the present process of brewing contain 25 a high per centage of alcohol as compared with the per centage of solid extract. Such beers as is well known are intoxicating and as a consequence their use is not only limited but is in some cases detrimental to the human system and as a consequence to health.—A few attempts have been made to produce beers containing a minimum proportion of alcohol so as to render them unintoxicating, but 30 the results have not been satisfactory.

Now by my improved process I have found that by treating the materials employed in the manner hereinafter described and employing suitable temperatures, I am enabled to exercise absolute control over the nature and character of my products and as a consequence I am enabled (in addition to the fact that purity, 35 wholesomeness, stability and refreshing qualities are the results of my process) to produce beers of the most widely divergent character, videlicet; beers of body and great nourishing qualities and of merely nominal spirit strength (from 1 to 2 per cent) to suit the requirements of those who advocate temperance principles.

Manbré's Improved Process of Brewing for Obtaining Temperance Beers.

In carrying out my process I proceed as follows, taking as an illustration the use of malt by which I mean germinated barley as now generally used by Brewers.

5 Instead of crushing the malt and using the meal and husk together as is now the practice, I grind the malt into farina and remove the husk or bran therefrom—I then dilute the farina with a suitable quantity of water heated to a temperature of 100 degrees Fahrenheit and then introduce the mixture of farina and water into a close vessel of any shape or form by preference made of copper and capable of resisting an internal pressure of from 90 to 100 lbs to the square inch which vessel
10 is heated as quickly as possible up to a temperature of 175 degrees Fahrenheit which temperature I maintain until I find by means of the well known "Fehling solution or Polariscopes" that the requisite proportion of alcoholizable or fermentable saccharine to yield the desired proportion of from 1 to 2 per cent of alcohol is formed—generally it will be found that the requisite proportion of alcoholizable
15 saccharine is formed immediately the temperature of 175 degrees Fahrenheit is reached. I then raise the temperature to from 250 to 300 degrees Fahrenheit according to the nature and quality of the malt employed, for the purpose of completing the conversion of the remaining portion of unconverted farina into dextrine or unalcoholizable saccharine and for sterilising or otherwise rendering
20 inert the nitrogenous and other objectionable matters which otherwise would affect the character and quality of the resulting beer.

The worts thus obtained are then freed from the residuum either by means of a filtering medium or by any other known process and subjected together with hops or extract of hops to a like temperature of from 250 to 300 degrees Fahrenheit
25 according to the character and nature of the hops or extract of hops employed for the like purpose of sterilising or otherwise rendering inert the nitrogenous and other objectionable matters they contain which otherwise would affect the character and quality of the resulting beer. The hopped worts are then cooled down to suitable temperatures and subjected to fermentation in the usual way.

30 In the case of using unmalted or prepared or non-prepared grain, cereals and other starchy substances in conjunction with malt, I proceed in the same manner as for the conversion of malt farina that is to say: I use the starch obtained and dilute it with the required quantity of water heated to 100 degrees Fahrenheit I then add to the mixture the malt farina in the proportion of from 10 to 20 per
35 cent of the weight of starch employed and heat the mixture up to 175 degrees Fahrenheit maintaining that temperature until the requisite proportion of alcoholizable or fermentable saccharine to yield from 1 to 2 per cent of alcohol is formed, I then raise up the temperature to from 250 to 300 degrees Fahrenheit according to the nature and quality of the starch employed for the purpose of completing
40 the conversion of the remaining portion of the unconverted starch into dextrine and for sterilising or rendering inert the nitrogenous and other objectionable matters it contains.

The worts thus obtained are then treated like the malt farina worts that is to say subjected with hops or extract of hops to a temperature of from 250 to 300
45 degrees Fahrenheit then cooled down to suitable temperatures and subjected to fermentation as usual.

In the case of using gum, dextrine or any other unfermentable or unalcoholizable saccharine substances, I proceed in the same manner as for the conversion of starch obtained from unmalted or prepared or non prepared grain, cereals, and other
50 starchy substances, that is to say, I dissolve a suitable proportion of gum, dextrine or any other unfermentable or unalcoholizable saccharine in the required proportion of water heated to a temperature of from 100 to 120 degrees Fahrenheit. I then add to the solution the requisite proportion of malt farina which varies from 10 to 20 per cent of the weight of the gum or dextrine or unalcoholizable
55 saccharine employed, the malt farina being used for the purpose of yielding the requisite proportion of from 1 to 2 per cent of alcohol and for imparting the malt flavour to the resulting beer—The mixture is then heated to 175 degrees

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Fahrenheit and maintained at that temperature until the requisite proportion of alcoholizable saccharine is formed—the temperature is then raised to from 250 to 300 degrees Fahrenheit—the worts are then treated like the malt farina worts that is to say subjected with hops or extract of hops to a temperature of from 250 to 300 degrees Fahrenheit then cooled to suitable temperatures and subjected 5 to fermentation as usual.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that I do not confine myself to the proportions of malt farina nor the temperatures above described as they may vary more or less according to the nature and quality of the materials employed without in any way affecting the resulting product, but what I do claim is 10

1. In the manufacture of temperance or non-intoxicating beers the process herein described for the production of worts containing only the requisite proportion of alcoholizable saccharine with a relatively large proportion of dextrinous and other unalcoholizable matters as hereinbefore described. 15

2. In the manufacture of temperance or non-intoxicating beers subjecting the worts obtained as herein described to a temperature of from 250 degrees to 300 degrees Fahrenheit for the purpose of sterilising or otherwise rendering inert the nitrogenous and other objectionable matters they contain as hereinbefore described. 20

3. In the manufacture of temperance or non-intoxicating beers subjecting the described mixture of worts and hops or extract of hops to a temperature of from 250 degrees to 300 degrees Fahrenheit for the purpose of sterilising or otherwise rendering inert the nitrogenous and objectionable matters the hops or extract of hops contain as hereinbefore described. 25

4. The manufacture and use of temperance or non-intoxicating beers, that is to say: beers not containing more than from one to two per cent of alcohol and with as much as from ten to twenty five per cent of dextrinous or other useful solid extractive matters substantially as hereinbefore described.

5. The use of a close vessel constructed of suitable material and capable of 30 resisting an internal pressure of from 90 to 100 lbs to the square inch to allow of obtaining the temperatures of from 250 to 300 degrees Fahrenheit as hereinbefore described.

Dated the 30th day of September 1885.

G. F. REDFERN, 35
4, South Street, Finsbury, London,
Agent for the Applicant.

LONDON: Printed by EYRE AND SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

1886.

126/11

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[Price 6d.]

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